

Water & Sewer



"I love the City of Wichita because it has big city diversity with small town values. Every day I come to work with a very strong work ethic and a smile on my face because I know I'm making a difference."

-Tony Gutierrez
Equipment Operator III







The Water & Sewer Department is dedicated to providing quality, reliable, customer-convenient water and sewer service to its customers that represents extraordinary value. We will remain the premier Water & Sewer utility in the region.

RECENT ACCOMPLISHMENTS

Integrated Call Center. Beginning in 2003, all calls to the Water and Sewer Department are routed through a central location in the Call Center at City Hall. This eliminated the distributed handling of service requests from the public and the recording of these requests in multiple records systems. The result is a centralized access and complaint tracking system for service requests and a systematic follow up process that has improved service and accountability.

Implementation of Interactive Voice Response (IVR) System. In late 2003, the Utility implemented an IVR system that has resulted in the automation of approximately 200 calls each work day. The system allows customers to access their account information twenty-four hours a day to request account balances, payment history, general billing information, and even pay their bills by the use of credit cards at any time. Service impacts have been favorable, allowing Division staff to record historic lows on abandonment rates of three to four percent since implementation of the system.

Taste & Odor Mitigation. Following several algae-related taste and odor events, staff began feeding powder activated carbon (PAC) to the water from Cheney Reservoir, and tested a pilot plant for ozone treatment. The preliminary design memorandum for a permanent ozonation plant has been completed and a design-build team selected. In addition, a sludge residual disposal project has been initiated.

Relocation of Water Distribution Offices and Personnel. In 2003, Water Distribution moved from a single facility at 1701 Sims Park Drive to three new facilities. The Service Crews moved to the NE and West Sub-Stations and Mains Crews with Administration moved to a redesigned and modified building that used to be the Transit Authority Building on McLean Blvd. The McLean facility won a Wichita Area Builder's Association Award for design.

Security Enhancements. Two projects increased security for the water treatment facilities, and security enhancements were implemented at other water & sewer facilities.

Four-Mile Creek Sewage Treatment Plant Upgrade. The upgrade of this facility from 1.5 million gallons per day to 3.0 million gallons is nearing completion.

Reduction of Overtime The implementation of the computer automation program to operate the pumps at the Hess Pump station has smoothed the pressure changes associated with turning pumps off and on. Because of that automation program, the distribution system was not subjected to as much water hammer stresses as in previous years. The resulting 23% reduction in leaks from 2002 to 2003 and tighter review of overtime in 2003 by management caused an overtime reduction of 36.87% over 2002 levels. Gross non-exempt employee overtime in 2002 was 18,842.5 hours and, in 2003, 11,895 hours.

Web-based reporting of backflow device testing. The Cross Connection/Backflow Prevention Program relies on private plumbing companies to report the results of device testing. Previously, this reporting system was several months behind because the reporting was done on paper forms that had to be filled out in the field, mailed to the Backflow Program Administrator, and then entered on the computer database by a Division employee. Compliance with the program was less than 77% of devices installed on the Wichita water system. With Web-based reporting of device testing that started in February 2003, device rebuild and testing reports are entered into the computer database by the private plumbing companies within a week of testing. More devices are identified and reported, and compliance is now greater than 98%.

Biosolids Quality. In 2003, 43,407 tons of Biosolids were applied on 14 different fields of agricultural land, located in Sedgwick, Sumner and Butler Counties, which met all of USEPA Exceptional Quality Standards. Treatment and application costs were stable at 2000 levels.

Sewer Maintenance Operational Improvements.

- ***Internal point repair.*** The 2003 budget included equipment and training to perform trenchless sewer repairs. The equipment was acquired in November of 2003. Staff received training and conducted enough repairs in two months to exhaust the initial supply of materials. If repairs proceed at the same rate, the equipment may enable staff to double the number of repairs in a year, reducing anticipated time to recover the initial equipment cost.



- *Cleaner life cycle cost reduction.* The 2003 budget included retrofitting three cleaners with new pumps and tanks instead of replacing entire units. Bids received in October of 2003 were \$180,000 less than the expected cost for completely new units. The new pumps and tanks were delivered in April of 2004.
- *Repair crew restructuring.* The 2003 budget included reclassifying one position to a crew leader and reorganizing the repair section into more crews without adding positions.
- *Standby emergency crew size reduction.* The 2003 budget included reducing the standby crew size from three persons to two persons during daylight hours to reduce overtime cost. Sewer Maintenance overtime in 2003 was 35% lower than in 2002.

Collection system performance in 2003.

- *Stoppages* in 2003 were 20% lower than in 2002. Stoppages per mile of sewer have declined by 32% in the last 6 years and declined by 60% in the last 12 years.
- *Cleaning* footage has almost tripled in the last 12 years. Crews clean approximately 20% of the system each year. Utilities selected by EPA as benchmark performers clean between 9% and 29% of their systems each year.

- *Other activities:*
 - ✓ 485,000 feet (5% of the system) inspected by television.
 - ✓ 330,000 feet (3% of the system) treated with root control chemicals.
 - ✓ 250 Sewer and manhole repairs
 - ✓ 241 Manholes adjusted to grade
 - ✓ 58,275 Feet of sewer rehabilitated
- *Safety:* Sewer Maintenance crews worked all of 2003 without a lost time injury.

DEPARTMENT OBJECTIVES

1. Provide a safe and adequate supply of drinking water:
 - a. Meet or exceed all federal drinking water standards.
 - b. Meet average day demand 365 days per year.
 - c. Meet maximum day demand.
2. Ensure the reliability of utility services:
 - a. Reduce the number of main breaks.
 - b. Reduce the number of sewer stoppages.
3. Be responsive to the expectations of our customers:
 - a. Mitigate taste and odor events.
 - b. Decrease telephone response time.
4. Improve the fiscal health of the Utility:
 - a. Use resources effectively.
 - b. Maintain a debt service coverage greater than 1.2.

PERFORMANCE MEASURES

Dept. Objective	Program Measure Description	2001 Actual	2002 Actual	2003 Actual	2004 Projected	2005 Projected
1a	Number of days met drinking water standards.	100%	100%	100%	100%	100%
1b	Percent of capacity used.	74.10%	71.60%	66.90%	70.00%	70.00%
1c	Maximum day demand.	118.5	114.6	107.1	120.0	120.0
2a	Number of main breaks per 1000 miles of water main.	665	628	427	420	410
2b	Number of sewer stoppages.	209	241	196	180	170
3a	Number of taste and odor events generating calls throughout the system.	182	357	223	50	20
3b	Telephone abandonment.	16.6%	14.4%	6.5%	5.0%	4.5%
4a	Number of overtime hours per 1000 hours worked.	7.38	6.49	4.87	4.75	4.60
4b	Water year-end debt service coverage ratio.	1.85	1.71	2.07	1.70	1.65
4b	Sewer year-end debt service coverage ratio.	1.41	1.70	1.87	1.60	1.50



OVERVIEW

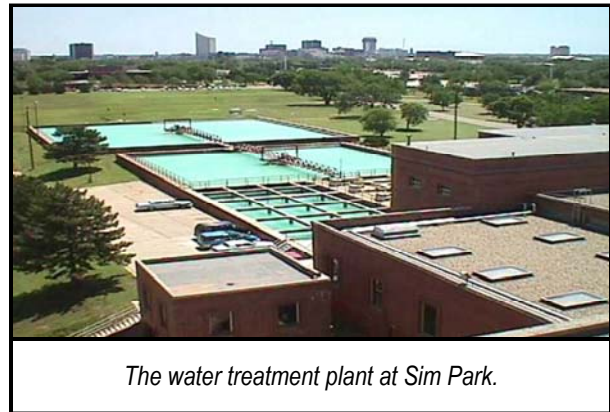
The Water and Sewer Department supplies and distributes high quality water, and collects and treats wastewater for the City of Wichita and areas surrounding Wichita which are part of the Water and Sewer Utilities. Services provided include pumping and purifying water, maintaining the water distribution and wastewater collection systems, treating wastewater and planning for future needs.

The Water Utility produces, treats, and distributes more than 20 billion gallons of water per year, on average, for its customers. In 2003, the Utility delivered 20.5 billion gallons of water to customers. The Sewer Utility collects and treats more than 15 billion gallons per

Water produces, treats and distributes more than 20 billion gallons per year. Sewer collects and treats more than 15 billion gallons per year.

year from its customers. In 2003, the Utility treated 13.5 billion gallons. Service levels, and water consumption

in particular, are driven primarily by system growth rates as well as weather conditions that affect consumption patterns. Despite the large volume of water produced and sewage treated, the Water & Sewer Utilities consistently exceed environmental regulations, often before such regulations are put into effect. This proactive approach assists in planning and helps to ensure that Utility customers receive excellent service value.



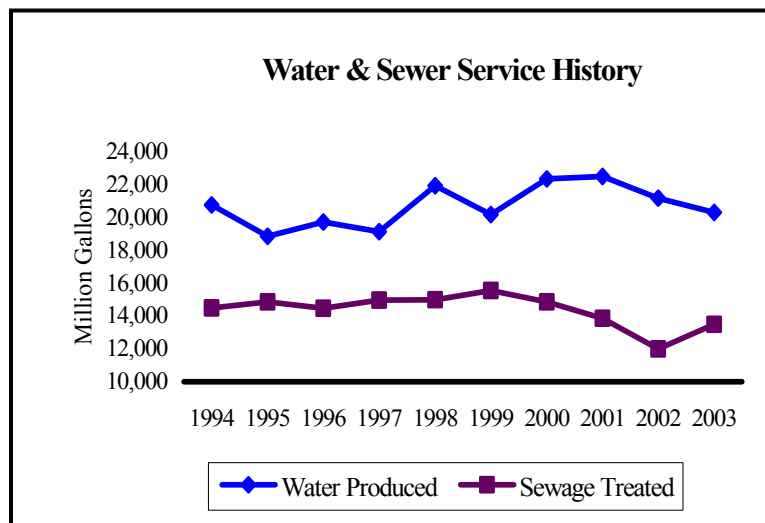
The water treatment plant at Sim Park.

DIVISION DESCRIPTIONS

The Water & Sewer Department is organized into six divisions: Administration; Customer Service; Water Distribution; Production and Pumping; Sewer Maintenance; and Sewage Treatment.

Administration: Administration provides direction and service for the entire utility. The Director focuses the efforts of the utility so that the mission is accomplished in accord with City Council direction, as well as State and Federal regulations, and with future needs always in mind. The Director also monitors the fiscal health of the utility as well as operational efficiency and policy compliance. The System Planning and Development section maintains records of underground water & sewer lines, as well as storm sewers and traffic light cables. In addition, they monitor the capacity of the system, plan capital improvements, and maintain and upgrade extensive infrastructure databases.

Customer Service: Customer Service is responsible for the revenue management functions of the Water and Sewer Utilities. This includes reading and billing over 135,000 customers each month and annual generation of over sixty million dollars in revenue. The Division's 81 employees read approximately 6,500 meters each day; take 800 phone calls from customers; and work roughly 300 customer service requests daily. Division personnel also staff 2nd shift and weekend dispatch and emergency response functions.



Extensive capital improvement planning ensures the Water and Sewer Utilities will continue to provide high quality water production and distribution and sewage collection and treatment well into the future. Currently the City has a Water Supply Plan in place to support growth and development through 2050. Additional sewerage facilities are also planned to respond to increasing needs and to continue to meet or exceed environmental regulations.

Water Distribution: Water Distribution operates and maintains the pipe network that transports potable water from the Water Treatment Plant to customers in an approximately 200 square mile area of Kansas. The goal of the division is to provide the maximum level of service by responding promptly to customer requests for service, maintain water appurtenances in the system for dependable fire protection, modify the distribution system as needed for building and road



projects, and extend the useful life of the entire potable water system.

Service Crews install and maintain two-inch and smaller piping from the water mains to the service meter for approximately 161,000 customers. Mains Crews install, maintain, and modify 1900 miles of water mains, ranging in size from two inch to 24 inch, 12,000 fire hydrants, and 40,000 water valves. The Division maintains two crews on standby during weekends and holidays to respond to emergency calls of customers. Water Distribution also administers the Cross Connection/Backflow Prevention Program.

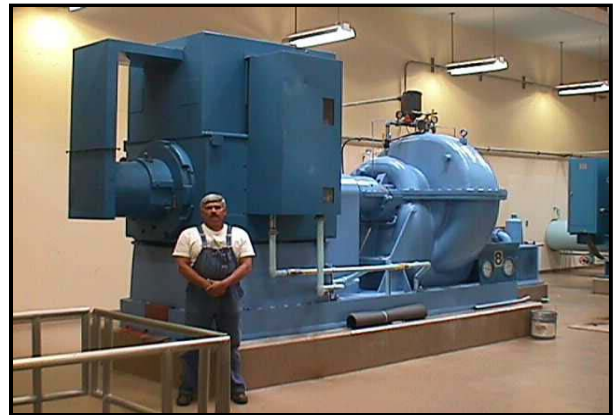
Production and Pumping: The Production & Pumping division monitors the raw water supply in the Equus Beds Wellfield and Cheney Reservoir, as well as several local wells, and operates and maintains the delivery system that transports the raw water to the water treatment plant. They also operate and maintain the water treatment plant, which cleans, purifies and softens the water to meet or exceed all federal drinking water standards. In addition, they are responsible for pumping the water into the system and maintaining adequate water pressure throughout the service area, using several pump stations as well as ground and elevated storage reservoirs. The division also includes a certified laboratory that monitors water quality.

All of this is accomplished using a staff of 47 employees who operate the plant 24 hours a day, 365 days per year. In 2003, the division purified and delivered 21.17 billion gallons of water to our customers.



The new Plant #3 opened in 2003 is also referred to as the Cowskin Creek Water Quality Reclamation Facility.

Sewer Maintenance: Sewer Maintenance operates and maintains the pipe network that transports wastewater from customers to treatment plants. The goal of the Division is to provide the public an acceptable level of service by responding promptly to customer requests, minimizing the volume of storm and groundwater carried to the treatment plants, eliminating



Water is delivered to citizens, thanks to dedicated staff and investments in equipment such as this 2,000 horsepower pump at Hess Pump Station. This pump alone handles approximately 30,000 gallons of water per minute.

backups and overflows, and extending the useful life of the entire sewer system.

The division operates and maintains the wastewater collection network with 82 people assigned to 34 crews working first and second shift, with personnel on standby during third shift and weekends. Crews respond to emergency calls and special customer requests, perform systematic maintenance activities that include cleaning, televising, root control and flushing, and repair defects and remove inflow and infiltration sources as these are discovered.

Sewage Treatment: The Sewage Treatment division operates and maintains the City's four sewage treatment plants: Sewage Treatment Plant #1 (3100 S. Grove), Sewage Treatment Plant #2 (2305 E. 57th St. South), Four Mile Creek (15,800 East Harry) and the Cowskin Creek Water Quality Reclamation Facility (4182 N 135th St. West). Fifty-six sanitary lift stations located throughout the collection system are also operated and maintained by the division.

The Cowskin Creek Water Quality Reclamation Facility is considered to be the most advanced wastewater treatment plant in the region.

The division manages the City's Industrial Pretreatment Program; Biosolids Land Application Program; Grease Interceptor Program; Silver/Mercury reduction program; Surface Water Quality Program; and Storm Water Sampling and Inspection Program. The division maintains a certified laboratory that conducts process control, NPDES, and contractual analysis for industry.

The Division has a budgeted staff of 75 employees, including operational staff 24 hours per day, year-round. Electrical and mechanical maintenance staff are on call during off hours for plant and lift station emergency response.



FINANCE AND OPERATIONS

Utility operating budgets reflect additions for deferred vehicle replacements, debt service requirements, and projected increases in bad debt costs caused by delays in the configuration of the Utilities' new billing system. The Sewer Utility budget also reflects additional operations and maintenance costs associated with the Four Mile Creek facilities. In the Water Utility, continued allowances have been made in the budget to account for sales tax.

The Water and Sewer utilities are facing capital costs in the coming years for refurbishment of existing infrastructure, and expansion of infrastructure to accommodate urban growth. Debt service is the largest single variable affecting the rate structure of each utility.

The City has a Water Supply Plan in place to support growth and development through 2050.

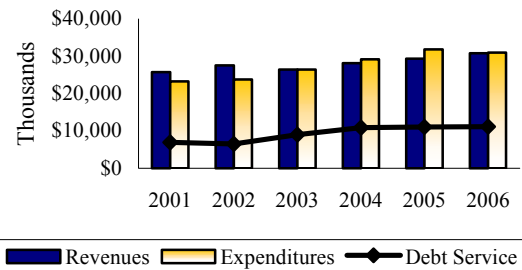
Projects, such as the Water Supply Plan, construction of the Northwest Sewage Treatment Plant (Plant #3), initial plans for an additional Mid-Con Plant in 2007, and required improvements to the recently acquired Sedgwick County sewer system (Four-Mile Creek), represent sound utility planning to support long-term growth and development.

Funding these projects, however, will result in short-term financial impacts in terms of urgency to increase rates. The City's utilities are facing an "intergenerational equity" issue with current utility customers bearing a disparate share of the costs associated with financing these major capital improvements that will also benefit future utility customers.



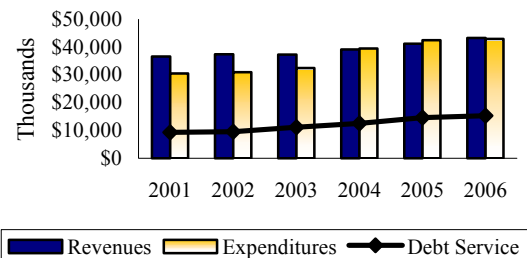
The City has invested nearly \$16 million in renovations for Plant 1, Plant 2, Four-Mile, and have plans for the construction of the Mid Con Plant to better serve the public.

Sewer Utility Operations



The years 2001, 2002 and 2003 were peak times in the Water and Sewer Capital Improvement Programs. The Water Supply Plan, relocation of the Water Distribution facility, and construction of Sewage Treatment Plant #3 required significant outlays from the utility funds. This leads to increased pressure on rates; however, reduced capital expenditures in 2004 and beyond indicate that the best course may be to delay some bonded debt issuance until CIP financing becomes more moderate in later years.

Water Utility Operations



The budget recommendation assumes issuance of regular 20-year revenue bonds. Due to issues including intergenerational equity and useful project life, some projects will be paid for with 25 year bonds. This reduces annual debt service costs and more equitably spreads the cost of projects with 40 to 50 year useful life. Actual issuance date for the bonds and length of time notes are required will depend on a variety of factors including market conditions and progress with the capital projects.

Water rates are based on a customer's average winter consumption (AWC), which is defined as the mean monthly consumption calculated during the months of December, January, February and March. The AWC is calculated in April



and is used as the basis for billings in the following twelve months. The minimum monthly AWC for any metered service on a meter sized at one inch or less is 6,000 gallons. In addition, a minimum monthly charge is assessed for all customers regardless of consumption. The water rate increases as consumption moves up from one block to the next. The AWC rate structure is designed to encourage conservation by imposing a penalty on excessive water usage.

In 2004 the Council took action to help alleviate taste and odor issues by approving a 4% fee increase for control. In addition there was an additional 3% annual water rate increase. Sewer rates were also increased by 3%. Projected rates are 4% for Water and 3% for Sewer.

Annual Water & Sewer Rate Increases Projected for 2005-2006				
	2003	2004	2005	2006
Water Rate Increases	3%	7%*	4%	4%
Sewer Rate Increases	3%	3%	3%	3%
* - In 2004 the Council approved an additional 4% rate to cover taste and odor issues.				
Bonded Debt Service Coverage Ratio (must equal or exceed 120%)				
	2003	2004	2005	2006
Water Coverage Ratio	207%	162%	157%	142%
Sewer Coverage Ratio	187%	149%	151%	139%
2004 Water Rate Structure Cost per thousand gallons				
	Inside-City Rate		Outside-City Rate	
Block 1 (0-110% AWC)	\$0.74		\$1.17	
Block 2 (111-310% AWC)	\$2.66		\$4.20	
Block 3 (above 310% AWC)	\$4.00		\$6.31	

Any future rate changes will be subject to review and approval by the City Council.

Because of sound fiscal management and planning for future capacity and financing needs, the Water and Sewer Utilities are in a solid financial position. This leads to a higher bond rating given by financial institutions evaluating utility bonds. A higher bond rating reduces overall debt service costs by reducing the

Projected higher debt service obligations are the primary variable affecting the need for rate adjustments.

interest rate at which debt can be issued in any given year. Part of this financial

strategy involves partial financing of capital improvements through cash reserves, which further reduces the cost of improvements by eliminating bond issuance and interest costs.

Revenue bond covenants require that after operating and maintenance expenses, net annual revenues must equal at least 120 percent of the annual debt service payments for principal and interest. This is the bonded debt coverage ratio. A higher ratio provides a cushion against fluctuations in utility revenues, which can be significant given the impact of weather changes on utility revenues.

Bond rating agencies and the bond market typically rate utilities as superior if the bond coverage ratio is relatively high. Although recent capital expenses have been significant, and the Sewer Utility ratio could fall below the 120 percent threshold, the combined Water and Sewer ratio will stay above 120 percent through the planning period.

FUTURE CHALLENGES

- Create a more flexible work force through increased training opportunities as well as cross-training.
- Continue enhancing the security of water and sewer facilities, including our ability to respond to emergencies.
- Continue the systematic installation of automated meters to reduce the cost of reading meters, to avoid errors and to enhance customer service.
- Implement customer internet access to pay bills and obtain billing history, to increase customer service, reduce need for additional customer service representatives, and reduce cost of billing.
- Continue to implement the Integrated Local Water Supply Plan, in order to assure that our customers will have sufficient water and of acceptable water quality.
- Investigate water reuse opportunities.
- Develop the Wetlands area and Fish Rearing Center at Cowskin Creek Water Reclamation Facility.
- Obtain sites for future sewage treatment facilities.



Sewer Utility Fund Budget Summary

	2003 Actual	2004 Adopted	2004 Revised	2005 Adopted	2006 Approved
Sewer Fund Revenue	26,510,967	29,266,600	28,214,470	29,373,700	30,837,290
Personal Services	8,227,081	8,495,670	8,495,340	8,887,310	9,201,760
Contractual Services	4,435,503	4,343,770	4,244,290	4,656,150	4,563,410
Commodities	2,014,557	2,204,170	2,239,170	2,409,320	2,382,390
Capital Outlay	699,256	847,850	811,040	1,802,870	664,860
Other	11,057,873	13,316,910	13,418,110	13,985,540	14,200,470
Total Sewer Fund Expenditures	26,434,270	29,208,370	29,207,950	31,741,190	31,012,890
Revenue Over (Under) Expenditures	76,697	58,230	(993,480)	(2,367,490)	(175,600)
Transfer to (from) Reserves	76,697	58,230	(993,480)	(2,367,490)	(175,600)
Total full-time positions	155	157	157	157	157
Total part-time positions	2	2	2	2	2
Total FTE positions	156	158	158	158	158

Water Utility Fund Budget Summary

	2003 Actual	2004 Adopted	2004 Revised	2005 Adopted	2006 Approved
Water Fund Revenue	37,496,312	39,225,420	39,336,870	41,273,700	43,407,380
Personal Services	7,291,688	7,981,340	8,025,500	8,413,700	8,735,870
Contractual Services	5,440,356	7,590,930	7,899,420	7,733,750	8,010,000
Commodities	2,181,552	2,941,690	4,174,330	4,188,470	3,593,630
Capital Outlay	2,376,316	730,190	806,280	1,102,240	719,740
Other	15,196,010	18,746,600	18,649,130	21,041,030	21,916,070
Total Water Fund Expenditures	32,485,922	37,990,750	39,554,660	42,479,190	42,975,310
Revenue Over (Under) Expenditures	5,010,390	1,234,670	(217,790)	(1,205,490)	432,070
Transfer to (from) Reserves	5,010,390	1,234,670	(217,790)	(1,205,490)	432,070
Total full-time positions	183	183	183	184	184
Total part-time positions	36	36	29	29	29
Total FTE positions	206.25	206.25	202.75	203.75	203.75

For additional information on the Water & Sewer Utility Departments visit www.wichita.gov!



Wichita Water & Sewer

In 1882, the City granted a franchise for the construction and operation of a central water system. This franchise was operated by a subsidiary of the American Waterworks Company until 1940 when the City assumed responsibility for the supply, transmission, and treatment of water in order to assure an excellent quality and abundant quantity of water to the residents of the City. In 1957, the City purchased the facilities owned by the American Waterworks Company with the proceeds of \$41,825,000 Waterworks Revenue Bonds.

The first sewer system was constructed in the City in 1889, with primary treatment facilities constructed in 1932 and secondary treatment facilities in 1959.

In 1987 the governing body of the City adopted an ordinance providing for the combining of the Water Utility and Sewer Utility into the Wichita Water and Sewer Utility.